Montana Board of Oil and Gas Conservation
Environmental Assessment

Operator: Slawson Exploration Company, Inc.
Well Name/Number: Pilum 1-24H
Location: NW NW Section 24 T21N R59E
County: Richland**, MT; Field (or Wildcat)** Wildcat (Bakken Horizontal)

Air Quality

(possible concerns)
Long drilling time: No, 25-35 days drilling time.
Unusually deep drilling (high horsepower rig): Triple derrick rig to drill a single lateral horizontal Bakken well test, 14,573'MD/10,266'TVD.
Possible H2S gas production: Slight chance H2S.
In/near Class I air quality area: No Class I air quality area.
Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under 75-2-211.

Mitigation:
X Air quality permit (AQB review)
__ Gas plants/pipelines available for sour gas
__ Special equipment/procedures requirements
__ Other:_____
Comments: Single lateral, 14,573'MD/10,266'TVD, Bakken Formation horizontal well.

_____

Water Quality

(possible concerns)
Salt/oil based mud: Yes intermediate string casing hole will be drilled with oil based invert drilling fluids. Brine water will be utilized to drill the horizontal lateral. Surface casing hole will be drilled with freshwater and freshwater mud.
High water table: No high water table expected.
Surface drainage leads to live water: No, closest drainages are O'Brian Creek, about 3/16 of a mile to the west and an unnamed ephemeral tributary drainage to O'Brien Creek, about 1/8 of a mile to the north from this location.
Water well contamination: No, closest nearby water wells are about ¼ of a mile to the northeast, about 5/8 of a mile to the southwest and about 5/8 of a mile to the south southeast from this location. Depth of these wells are 160' and 1368' in depth. Operator's permit states surface casing to be set at 1574', recommend that surface casing be set at 1606' to ensure that the Base of the Fox Hills formation is covered. Surface hole will be drilled with freshwater and surface casing will be cemented to surface from 1606'.
Porous/permeable soils: No, silty sand clay soils.
Class I stream drainage: No, Class I stream drainages.

Mitigation:
__ Lined reserve pit
X Adequate surface casing
__ Berms/dykes, re-routed drainage
X Closed mud system
__ Off-site disposal of solids/liquids (in approved facility)
X Other: Lined cuttings pit will be dug for cuttings burial on well site.
Comments: 1606' surface casing to be set to protect freshwater zones and to cover the Fox Hills aquifer. Adequate surface casing and operational BOP equipment should prevent any problems.

Soils/Vegetation/Land Use

(possible concerns)
Steam crossings: None, crossing only ephemeral drainages anticipated.
High erosion potential: No, location will require small cut, up to 1.7' and small fill, up to 4.4', required.
Loss of soil productivity: None, location to be restored after drilling well, if nonproductive. If productive unused portion of drillsite will be reclaimed.
Unusually large wellsite: No, very large well site 430'X335'
Damage to improvements: Slight, surface use is a cultivated field.
Conflict with existing land use/values: Slight

Mitigation
__ Avoid improvements (topographic tolerance)
__ Exception location requested
X Stockpile topsoil
__ Stream Crossing Permit (other agency review)
X Reclaim unused part of wellsite if productive
__ Special construction methods to enhance reclamation
__ Other _____

Comments: Access will be over existing county road, #116. An access road will be built into location off the existing county road, 116, about 3,737' new road will be built into this location. Cuttings will either be buried and solidified in the lined cuttings pit or trucked to an authorized disposal site. Oil based invert drilling fluids will be recycled. Completion fluids will be hauled to a Class II disposal. Pit will be allowed to dry before being backfilled. No concerns.

Health Hazards/Noise

(possible concerns)
Proximity to public facilities/residences: Closest residence is about 5/8 of a mile to the southeast from this location.
Possibility of H2S: Slight chance H2S.
Size of rig/length of drilling time: Triple drilling rig 25 to 35 days drilling time.

Mitigation:
X Proper BOP equipment
__ Topographic sound barriers
__ H2S contingency and/or evacuation plan
__ Special equipment/procedures requirements
__ Other:_____

Comments: Adequate surface casing cemented to surface with working BOP stack should mitigate any problems. Distance sufficient to mitigate noise problems.

Wildlife/recreation

(possible concerns)
Proximity to sensitive wildlife areas (DFWP identified): None identified.
Proximity to recreation sites: None identified.
Creation of new access to wildlife habitat: No
Conflict with game range/refuge management: No
Threatened or endangered Species Threatened or endangered species listed in Richland county by USFW service are Pallid Sturgeon, Piping Plover, Interior Lease Tern and Whooping Crane. Candidate species are the Greater Sage Grouse and the Sprague's Pipit. NH tracker website lists the following as "Species of Concern": eight (8) are listed as follows: Hoary Bat, Meadow Jumping Mouse, Grasshopper Sparrow, Great Blue Heron, Veery, Whooping Crane, Loggerheaded Shrike and Spiny Softshell turtle.

Mitigation:
__ Avoidance (topographic tolerance/exception)

__ Other agency review (DFWP, federal agencies, DSL)
__ Screening/fencing of pits, drillsite
__ Other:_____
Comments: Surface is private cultivated land. There may be species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern are discovered at this location.

Historical/Cultural/Paleontological

(possible concerns)
Proximity to known sites None identified.
Mitigation
__ avoidance (topographic tolerance, location exception)
X other agency review (SHPO, DSL, federal agencies)
__ Other: _____
Comments: Surface is private cultivated land. There may be possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desires to preserve these sites or not, if they are found during construction of the wellsite.

Social/Economic

(possible concerns)
__ Substantial effect on tax base
__ Create demand for new governmental services
__ Population increase or relocation
Comments: Wildcat well. No concerns._____
_____
_____

Remarks or Special Concerns for this site

A single lateral Bakken horizontal well test, 14,573'MD/10,266'TVD.
_____

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. Some short term impacts will occur.
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I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): /s/Steven Sasaki
(title:) Chief Field Inspector
Date: January 13, 2012
Other Persons Contacted:
_____
_____
(Name and Agency)
Montana Bureau of Mines and Geology, Groundwater Information Center website.
(subject discussed)

_Water wells in Richland County_____
(date)
January 13, 2012

US Fish and Wildlife, Region 6 website
(Name and Agency)
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES MONTANA COUNTIES, Richland County
(subject discussed)

January 13, 2012_____
(date)

Montana Natural Heritage Program Website (FWP)
(Name and Agency)
Heritage State Rank= S1, S2, S3, T21N R59E
(subject discussed)

January 13, 2012_____
(date)

If location was inspected before permit approval:
Inspection date: _____
Inspector: _____
Others present during inspection: _____